

WHAT IS CLAIMED IS:

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1. A bus power-supply device structured to supply power from a power-supply voltage of a node to a serial bus connected to the node through a physical layer and a plurality of connectors conductive to each other of the node, wherein

5 when none of a power-supply voltage of said node is supplied, a DC voltage is supplied from said serial bus to said physical layer, and

10 when said power-supply voltage is supplied, a path for supplying a DC voltage from said serial bus to said physical layer is cut off to supply a DC voltage from said power-supply voltage to said physical layer.

2. The bus power-supply device as set forth in claim 1, comprising:

voltage detection means for detecting said power-supply voltage being supplied or not being supplied, and

5 selection means for supplying a DC voltage coming from said serial bus to said physical layer when said voltage detection means is yet to detect supply of a power-supply voltage and cutting off the path for supplying a DC voltage from the serial bus to said physical layer to supply a DC voltage from the power-supply voltage to said physical layer when said voltage detection means detects supply.

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3. The bus power-supply device as set forth in claim  
1, comprising  
a comparator as said voltage detection means.

4. The bus power-supply device as set forth in claim  
2, comprising  
as said selection means:

a first path for supplying power from said power-  
supply voltage to said physical layer, and  
a second path for supplying power coming from  
said serial bus to said physical layer, wherein  
when power is supplied from said power-supply  
voltage, said second path is cut off.

5. The bus power-supply device as set forth in claim  
2, comprising  
a semiconductor switch as said selection means.

6. The bus power-supply device as set forth in claim  
2, comprising  
a comparator as said voltage detection means.

7. The bus power-supply device as set forth in claim  
2, comprising  
a relay element as said voltage detection means  
and said selection means.



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said serial bus to said physical layer, wherein  
when power is supplied from said power-supply  
voltage, said second path is cut off.

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10. The bus power-supply device as set forth in claim  
8, wherein

said voltage detection means detects said power-  
supply voltage being supplied or not being supplied by  
detecting an output voltage of said power-supply circuit.

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11. The bus power-supply device as set forth in claim  
8, wherein

said voltage detection means detects said power-  
supply voltage being supplied or not being supplied by  
detecting an output voltage of said power-supply circuit,  
and which further comprises as said selection  
means:

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a first path for supplying power from said power-  
supply voltage to said physical layer, and

a second path for supplying power coming from  
said serial bus to said physical layer, wherein

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when power is supplied from said power-supply  
voltage, said second path is cut off.

12. The bus power-supply device as set forth in claim  
8, comprising

as said selection means:

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16. A node connected to a serial bus, comprising:  
a plurality of connectors connected to the serial  
bus each having a power-supply terminal to which a DC  
voltage is applied from other nodes and a signal  
5 terminal to and from which a signal from other nodes is  
input and output,

a physical layer for outputting a signal input  
through a signal terminal of one connector to a signal  
terminal of the other connector, and

10 a bus power-supply device structured to supply  
power from a power-supply voltage to said physical layer  
and said serial bus, wherein

power-supply terminals of said plurality of  
connectors are rendered conductive to each other,

15 said bus power-supply device

supplies a DC voltage from the serial bus to said  
physical layer through said power-supply terminal when  
none of a power-supply voltage of said node is supplied,  
and

20 cuts off a path for supplying a DC voltage from  
said serial bus to said physical layer to supply a DC  
voltage from the power-supply voltage to said physical  
layer when said power-supply voltage is supplied.

17. The node as set forth in claim 16, wherein  
said bus power-supply device comprises:  
~~voltage detection means for detecting said power-~~

18. The node as set forth in claim 17, comprising  
as said selection means of said bus power-supply  
device:

a second path for supplying power coming from  
said serial bus to said physical layer, wherein  
when power is supplied from said power-supply  
voltage, said second path is cut off.

a power-supply circuit for converting said power-supply voltage into a DC voltage for said serial bus and outputting the DC voltage,

voltage conversion means for converting a DC voltage output from said power-supply circuit into a DC

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voltage for said physical layer,

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voltage detection means for detecting said power-supply voltage being supplied or not being supplied to said power-supply circuit, and

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selection means for supplying a DC voltage applied from said serial bus to said voltage conversion means when said power-supply voltage is not supplied to said power-supply circuit and cutting off a path for supplying a DC voltage from said serial bus to said voltage conversion means to supply an output of said power-supply circuit to said voltage conversion means when said power-supply voltage is supplied.